

REMARKS

Applicants appreciate the Examiner's thorough review of the present application, and respectfully request reconsideration in light of the preceding amendments and the following remarks.

Claims 1-26 are pending in the application. The claims have been amended to improve claim language. The specification and Abstract have been revised to be compliant with commonly accepted US patent practice. No new matter has been introduced through the foregoing amendments.

The Examiner's 35 U.S.C. 103(a) rejections relying primarily on *Lane* (U.S. Patent No. 2,667,280) and *Schmitkons* (U.S. Patent No. 5,739,429) are respectfully traversed for the following reasons.

Lane fails to teach or suggest at least the feature of original claim 1 that "compressed gas flowing from the compressed gas intake duct is able to force the metered quantity of powder from the metering chamber into the powder outlet duct." In other words, original claim 1 requires that the metered quantity of powder be forced by compressed gas out of the metering chamber.

In contrast, *Lane* discloses that the metered quantity of powder is forced by the piston 4 out of the metering chamber.¹ It should be noted that during displacement of the metered powder the main gas line 12 is closed.² Although the other gas line 22 may be opened, the gas flow from that auxiliary gas line 22 is not arranged to expel the metered powder out of the chamber. Rather, the gas flow from gas line 22 is intended for flushing the wall of the piston, or maintaining fluidization of the charge in the chamber, and to minimize any compacting effect on the solid charge.³ Thus, it

¹ See *Lane* at column 5 lines 30-32.

² See *Lane* at column 4 line 26.

³ See *Lane* at column 4 lines 34-40.

is clear from the disclosure of *Lane*, especially column 5 lines 30-32, that the metered quantity of powder is moved out of the chamber by the piston 4, rather than be compressed gas as presently claimed. This deficiency of *Lane* is not curable by any of the applied teaching references, and therefore, claim 1 is patentable over the applied art of record.

It should further be noted that the teaching reference of *Schmitkons* fails to teach or suggest many features of independent claim 1, contrary to the Examiner's analysis found at paragraph 4 of the Office Action.

For example, the Examiner alleged that *Schmitkons* discloses, at column 11 line 58 through column 12 line 12, the feature of claim 1 that "the compressed gas being introduced at the end of the delay time into the metering chamber and the quantity of powder metered until the end of the delay time is forced by the compressed gas out of the metering chamber."⁴ Applicants respectfully disagree. The cited passage is reproduced herein below for the Examiner's convenience of review:

"Air from the supply 90 flows through the lines 85, 86 and 87 and through the taps 64, 65 and 66 in the venturi block 59 to force out any powder that may have accumulated in the taps, so that the taps remain clean. To assure that the purge air pressure is prevented from pressurizing the transducers 92 and 93, the solenoid valves 91, 95 and 97 should always be energized after the valves 89, 94 and 96 are energized, and the solenoid valves 91, 95 and 97 should always be de-energized before the solenoid valves 89, 94 and 96 are de-energized. The automatic purge sequence and the zeroing sequence can be performed at any desired intervals, and the timing of these sequences will vary depending upon sample time and purge time requirements. Typical values for operation a powder coating system may be a 15 second pressure measurement period followed by a 0.5 second purge and autozero period."

It is clear from the cited passage that any time delay that might have been taught by *Schmitkons* is used to purge the taps 64-66 which are, according to the Examiner, not the metering chambers. The metering chambers as applied by the Examiner are 18a-18c.⁵ Thus, *Schmitkons* does not teach or suggest that, at the end of the time delay, powder is forced out of the metering chamber as presently claimed. The reference teaches at best that at the end of a time delay (if any),

⁴ See Office Action at page 5, lines 2-3.

residual powder is forced out of other parts of the power coating system, namely, taps 64-66 which are part of the venturi block 59 and are outside the “metering chambers” 18a-18c. Thus, even if *Schmitkons* was combinable with *Lane*, to which Applicants contend to the contrary, the combined system would still fail to include a pump control unit that controls the displacement of the metered powder from the metering chamber at the end of the time delay.

Withdrawal of the rejection of claim 1 in view of the above is now believed appropriate and therefore respectfully requested.

Withdrawal of the rejection of independent claims 21 and 23 is also requested because the applied references singly or in combination fail to disclose, teach or suggest all limitations of the rejected claims, namely, the step of “expelling the metered quantity of powder, by means of compressed gas, out of the metering chamber” and the claimed time delay at the end of which “the metered quantity of powder is forced by the compressed gas out of the metering chamber,” for reasons similar to those advanced above with respect to claim 1.

The dependent claims are considered patentable at least for the reasons advanced with respect to the respective independent claims. The dependent claims are also patentable on their own merits since these claims recite other features neither disclosed, taught nor suggested by the applied art.

For example, as to claim 2, Applicants respectfully submit that the Examiner again mischaracterized the teachings of *Schmitkons*. In particular, the Examiner alleged that in *Schmitkons*, at column 8 lines 51-65, the timer transmits a control signal to a reversal device upon the lapse of a predetermined cycle time.⁶ Applicants respectfully disagree. The cited passage is reproduced herein below for the Examiner’s convenience of review:

⁵ See Office Action at page 4, line 3 from bottom.

⁶ See Office Action at page 5, lines 4-5.

"The weight loss experienced by the load cell 28 over the last minute is measured at step 41), and from this, a running average of the last 15 measurements is calculated at step 41. This average load cell flow rate from step 41 is compared with the average meter flow rate from step 39 at step 42, and from this comparison a correction factor is obtained at step 43. The flow rates from each meter stored at step 44 are multiplied by this correction factor at step 45 to determine the corrected flow rates for each meter. The corrected flow rates obtained at step 44 are output to the display 32 at step 46. The corrected flow rates are also compared to the pump set points for each supply line at step 47. If the corrected flow rates vary from the set points, the rate of the pump 18a, 18b or 18c associated with that flow meter is adjusted at step 48 to move the corrected flow rates toward the set points."

It is clear that the cited passage only discloses how to correct the readings of certain meters and adjacent the rate of pumps 18a-18c based on the corrected readings. Thus, any control signals that might have been disclosed in the passage are sent to the pumps. The passage does not teach to supply control signals to a reversal device which, as defined in claim 2 of the instant application, is for reversing the motion of the expelling element from the suction stroke to the pressure stroke and vice-versa. Thus, even if *Schmitkons* was combinable with *Lane*, to which Applicants contend to the contrary, the combined system would still fail to include a timer that transmits control signals, each upon the lapse of a predetermined cycle time counted by said timer, to the reversal device as presently claimed. Withdrawal of the rejection of claim 2 in view of the above is now believed appropriate and therefore respectfully requested.

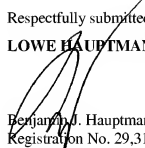
Each of the Examiner's rejections has been traversed. Accordingly, Applicants respectfully submit that all claims are now in condition for allowance. Early and favorable indication of allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

LOWE HAUPTMAN & BERNER, LLP



Benjamin J. Hauptman
Registration No. 29,310

1700 Diagonal Road, Suite 310
Alexandria, VA 22314
(703) 684-1111 BJH/KL/klb
(703) 518-5499 Facsimile
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